difficult task of putting together our list and those of the 42 other specialist groups to form a seamless whole. This will have to be done early in the new year so that the work is completed by April 1994.

Within the past few weeks the diagnostic lists in congenital and adult heart disease were "piloted"—that is, submitted on disk with a simple browser to some of our members. They were not well received. It was a mistake to have combined adult and congenital heart disease because it was difficult to find common terms in adult cardiology among the large number of terms for uncommon congenital conditions. When the terms appear in April, adult and congenital heart disease will be "flagged" so that the user can choose which list to use. The pilot study did show a need for more acronyms and synonyms and this has been addressed. With the Read clinical terms, as with a new textbook or dictionary, readers have to get used to finding their way around.

Many general practitioners use the existing Read terms and say they would be lost without them. The new terms should be better and time will show how useful they are in hospital and specialist practice. Inevitably there will be errors and omissions in the new terms and things that could have been done better. We urge our members to use the new terms when they become available, to persevere with them, and to make constructive criticisms. Small changes can be made in the terms every three months or so and larger changes at longer intervals. A Read Code keyworker will be available through Fitzroy Square and ideas and suggestions can be passed on to the Centre for Coding and Classification."

European Society of Cardiology

Philip Poole-Wilson writes: "The European Heart House in Sophia Antipolis, 14 kilometres to the west of Nice, has now been officially opened. The Education and Training Programme for 1994 is available. The programme is being organised by Marten Simoons. The first meeting (13–15 January 1994) is on "Intracoronary diagnostic techniques in interventional cardiology" and is organised by Patrick Serruysa, C di Mario, and Jos R T C Roelandt from Rotterdam. The second meeting is on 10–12 February 1994 and the topic is "Advances in pacemaker technology: selection of the appropriate system for your patient." It is organised by Anthony Rickards, Rolf Nordlander, and K den Dulk. The programme extends from January to December and covers virtually all branches of cardiology. There are excellent programmes on echocardiography, myocardial infarction, myocardial viability, angina, endocarditis, arrhythmias, and prevention of coronary heart disease. Information can be obtained from ECOR Meetings Services Department, 2035 Route des Colles—Les Templiers, BP 179, 06903 Sophia Antipolis France (tel: 010 33 92 94 76 00, fax: 010 33 92 94 76 01).

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BCS COUNCIL STATEMENT

Strategic planning for cardiac services and the internal market: role of catheterisation laboratories in district general hospitals

INTRODUCTION

The advent of the internal market within the National Health Service has lead to major changes in the way in which cardiology and cardiac surgery are funded. Previously, they were designated as regional specialties and the budgets for services were often not "ring-fenced" but were lost in the overall financial programmes of the host hospitals, and activity was controlled by the facilities that were provided.

Supra-regional centres for cardiac and pulmonary transplantation, infant and neonatal cardiology, and associated cardiac surgery have been funded through central top-slicing, and until now have been the exceptions. Attempts to introduce a similar process for complex cardiac electrophysiology procedures have been unsuccessful.

THE NEW INTERNAL MARKET

The introduction of the internal market has led to major changes in the way that cardiac services are funded and controlled. The role of the Regional Health Authorities has altered from that of funding and supervising providers to that of supervising the purchasing functions of District Health Authorities. In turn Districts are being amalgamated so that the purchasing function is becoming multi-district. The increasing number of trust hospitals, though reporting directly to the Department of Health through the six Outposts in England and Wales, find themselves competing with each other and other providers for contracts offered by these new purchasing authorities.

At present the new arrangements provide no advisory machinery to ensure that there is appropriate strategic planning for individual specialties, and developments are dependent on market forces and the vagaries of the aspirations of individual trusts, directly managed units, and purchasing authorities. The emphasis of the purchasing authorities is on financial control with, as yet, no mechanism in place to ensure that the contracting arrangements provide levels of activity for individual procedures that meet national targets, with the possible exception in our specialty of coronary bypass operations, and even here the target is out of date (1990).

CONTRACTING ARRANGEMENTS

In the first year of the internal market (1991–92) money allocated to specialties was identified to individual districts on the basis of the activity in 1989–90 as recorded by finished consultant episodes and taking no account of case mix. The actual specialty costs had not been accurately identified before this exercise took place. When more accurate costings were available during the second year of contracting (1992–93), many districts were faced with a shortfall and could not purchase the same level of service as before.

At present there is no consistent pattern in the way that contracts for cardiology and cardiac surgery are being managed across the country.

Some District Health Authorities are buying cardiology and cardiac surgery from the provider with a mix of day case cardiology, inpatient cardiology, cardiac surgery, and thoracic surgery, each having a different price within a **block contract** that is controlled by finished consultant episodes but with indicative case mix.

In other areas such as Yorkshire, where contracting has been in place for longer, contracts have been refined as costing of individual procedures has developed. Here some contracts are negotiated on a **cost-per-case** or **cost and volume** basis.

Some Regional Health Authorities such as Trent have retained control of the contracting process, aiming for a managed transfer of the purchasing function.

This lack of uniformity nationwide has been aggravated by inadequate coding of procedures and by differing methods of apportioning costs to individual procedures.

WAITING LISTS

Traditionally, waiting lists have belonged to hospitals and there has been criticism of the length of these lists. Waiting list initiatives have required hospitals to shorten their lists for long waiters regardless of priority. Given that over 40% of work in adult cardiology and cardiac surgery is urgent or emergency, many districts have found it necessary to stop elective work during the second half of the contracting year. Only if additional income has been found through extra-contractual referrals or waiting list initiatives at marginal costs have some districts been able to continue to treat non-urgent cases.

It is now clear that responsibility for waiting times lies not with individual providers but with the purchasing authorities. It is therefore essential that the providers (including clinicians) enter into dialogue with purchasers to ensure that provision of services can be managed effectively to give a correct balance between emergency and elective cases.

DEMAND FOR SERVICES AND THEIR LOCATION

It has long been recognised that the population living adjacent to a specialist facility often makes more use of it than does a population that is more distant. In some regions districts with specialist centres are achieving rates for coronary bypass surgery of **800 operations per million of population per annum** compared with rates of less than **150 per million** in more remote districts, particularly those that do not employ a physician with specialist training in cardiology and those larger districts that employ only one cardiologist.

It is likely that the contracting process and weighted capitation will even out the provision of services and allow districts remote from tertiary centres to increase their uptake of cardiology and cardiac surgery procedures. However, the current inequality of access and the problems that are encountered with long waiting lists have caused some districts to consider setting up their own diagnostic facilities. This opportunity arises as a result of the recent appointment to district hospitals of cardiologists with the necessary invasive skills and

of the advent of multipurpose vascular laboratories capable of obtaining good quality images of coronary arteries. Managers in district hospitals are attracted by the notion that a local service might be cheaper if the overheads and capital charges offered by district hospitals were lower than those of the larger teaching centres. Early experience in one such district hospital (York) has shown this to be the case and the lower costs have allowed a considerable increase in activity.

However, it has to be recognised that charges being made by tertiary centres are often inappropriate at present and it is likely that simpler procedures and elective procedures are being overpriced and complex and urgent or emergency procedures underpriced.

WHERE SHOULD CARDIOLOGICAL FACILITIES BE PROVIDED?

The dividing line between the services that should be provided in every district hospital and those that should be provided in specialised, so-called tertiary, centres is always likely to vary and will depend on local facilities and local skills. The British Cardiac Society has played a major part in developing district hospital cardiology and it is appropriate that the Society should provide guidelines on the long-term strategic planning of cardiological services.

OPTION APPRAISAL

Council identified **four options** that could be considered:

1 That district hospital cardiologists should undertake no invasive work and refer all cases to specialist centres for investigation.
2 That district hospital cardiologists with appropriate training be offered specified sessions at the specialist centre for invasive investigation mainly of an elective nature.
3 That some district hospitals, particularly those that are geographically disadvantaged, develop facilities for invasive investigation. This may be in conjunction with neighbouring districts to ensure that expensive facilities are used with utmost efficiency and will require that appropriate skills are developed and maintained in all members of the team.
4 That elective invasive investigation in district hospitals should become the norm and that specialist centres concentrate their resources in the development of interventional techniques, provision of emergency treatments, and provision of diagnostic services for their own catchment population only.

In considering these options, Council took note of the elements outlined in the following table in order to inform the discussion:

Factor for consideration	*In favour of regional tertiary provision*	*In favour of district local provision*
Efficient use of equipment	Maximise use of expensive resource	Maximise use of expensive vascular equipment
Cost per case	Reduced by increasing throughput	Reduced by lower capital charges and overheads
Effect on travelling		Reduced for patients and cardiologist Most patients do not live near tertiary centres
Effect on waiting time for investigation	Dependent on contracts	Probably reduced by providing more new facilities
Effect on surgical referral rate		Rate may increase so that current unmet demand is brought to light
Effect on referral for PTCA	Ability to fast-track patients and avoid second procedure	Frees lab space at centre for more PTCA
Effect on safety	Immediate surgical cover an advantage	Increased safety through reduced waiting time
Doctor satisfaction		Increased through ability to see patients through whole course of illness
Effect on training	Loss of investigational cases may hinder training of registrars Devolution to districts may force all cardiologists (inappropriately) to develop invasive skills	Some districts will have registrars rotating through higher cardiology training
Maintenance of skills	Sufficient activity to maintain skills	Avoids wasting district hospital skills
Effect on research	Reduced workload might hinder research activity	Routine diagnostic work of limited value for research
Professional relations and dialogue	Tertiary centres provide better forum for case discussion and planning Easier to keep abreast of new ideas and protocols	District cardiologists should keep close links with the centre whatever
Effect on audit	More easily organised if on one site	Would need to join national confidential enquiry on complications
Effect on emergency work	Centres must remain robust enough to cope with emergency referrals	Districts without surgical cover should not investigate emergency patients
Radiation	May be higher if tertiary centre cardiologists undertake only interventional cases	Radiation burden will be shared by more cardiologists

Members of council were agreed that the skills available in many district hospitals should be utilised wherever possible. **Option 1** was therefore excluded.

In some circumstances it would be more appropriate for district cardiologists to travel to a tertiary centre for investigational sessions. In others the procedures could be carried out at the district hospital, an approach that would be most appropriate in districts that are geographically remote. In the former situation, access to the centre should reflect the needs of both parties and should be reflected in the contract between the purchaser and the provider. The contracts should take into account factors such as protected laboratory time, office and secretarial support, throughput and the time given to the service by the visiting cardiologist. If district hospitals were to carry out procedures, they would need to meet certain strict criteria before they set up their own facility for coronary angiography (see below).

Council accepted that district hospitals should play an increasing part in the routine assessment of patients with suspected coronary heart disease and that unless this development took place the true demand for invasive management of coronary artery disease would never truly come to light. Council therefore supported **Options 2 and 3** as appropriate strategies subject to the criteria laid out below. It was accepted that such developments would in effect move closer to **Option 4** in time in that the role of tertiary centres would change to a higher level of specialisation as services in district hospitals gradually develop.

CRITERIA TO BE MET BY A DISTRICT HOSPITAL CARDIAC CATHETERISATION LABORATORY

1 Initiative for development of facilities

The development of such facilities will depend on local initiative but should occur only in the context of an overall strategic plan for cardiology services determined by purchasers in consultation with provider units.

2 Size of districts

Districts should be purchasing 600 major interventional procedures that require catheterisation per million of population per year—many districts are purchasing substantially more at the present time and a conservative target for the next 3–4 years is 450 CABGs, 300 PTCAs, 100 valve procedures, and 30 other procedures—a total of 880 procedures for adults per million of population. For a district purchasing 880 such procedures per year, this implies a need for approximately 1320 invasive diagnostic tests per million per year. The ratio of diagnostic to interventional procedures was not the same for all cases. Up to 30–40% of the interventions will be required for emergency or urgent cases and these may need investigation at a tertiary centre. Since this group has a near 1:1 ratio for investigation, up to 1000 invasive diagnostic procedures per million might be suitable for facilities within a district general hospital. In a district with a population of 250 000 the annual need approaches 250 cases per year. A cardiologist working 46 weeks each year could expect personal involvement with four to five cases per week, which is regarded as the minimum needed to maintain an adequate level of

skill. Larger districts will handle 350 to 500 procedures per year that are suitable for local investigation.

3 Number of operators
There should normally be at least two operators available in each laboratory. If both are to maintain an adequate level of skill, a minimum of eight cases per week should be investigated. It follows that a laboratory should serve a population of at least 500 000, a figure that exceeds the size of almost all our districts. We believe, therefore, that an important criterion for a district hospital cardiac catheterisation laboratory is that it should serve two or more neighbouring districts.

4 Experienced operators
The cardiologist(s) should be fully trained in cardiac catheterisation and should have had adequate recent experience.

5 Clinical management
The patients and cardiac procedures should be under the direction of a cardiologist. Radiologists with appropriate training in cardiac catheterisation and coronary angiography may be able to share the workload.

6 Ancillary staff
The laboratory must be staffed by appropriately trained nurses, technicians, and radiographers.

7 Equipment
The equipment specification should be such that the image quality is at least as good as one would expect at regional centres and it should conform to the latest recommendations on radiation exposure.

8 Liaison
District hospital cardiologists when setting up local facilities should establish close links with cardiac surgeons and interventional cardiologists in order to review all potential cases, establish methods of referral and waiting list priorities, and agree protocols for postoperative care and follow up.

9 Audit
District hospital laboratories must be audited. They should enrol in the Confidential Enquiry of Catheter Laboratory Complications being run by the Audit Committee of the British Cardiac Society. In addition, the district general hospital should be able to show evidence of participation in a quality control scheme for image quality and adequacy of investigation. Such schemes must include at least one centre performing cardiac surgery and interventional cardiology and might include a group of district hospitals.

10 Trainees
It will be appropriate to train junior doctors to undertake coronary angiography in district hospitals only if they are holders of posts recognised by the SAC of the JCHMT for higher training in cardiology.

OTHER CONSIDERATIONS
Paediatric invasive cardiology procedures should remain within the domain of regional centres except for limited non-invasive assessment of older children.

Further efforts should be made to obtain supra-regional funding for centres specialising in complex cardiac electrophysiology, radiofrequency ablation procedures, implantation of automatic implantable cardiac defibrillators, and surgical treatment of arrhythmias. These procedures rightly have their place in tertiary centres where expertise and research abilities can be concentrated.

Pacemaker implantation is appropriate in a district hospital if the cardiologist has the necessary skills and if there is the necessary technical support for follow up and monitoring of implanted units. A cardiologist working alone should have an arrangement for cross cover with a colleague in an adjoining district to cover emergencies during absences or illness.

CONCLUSIONS
The expansion of services for cardiology requires a strategic and planned development. The British Cardiac Society intend to develop guidelines and to seek their implementation. Furthermore it is urgent that cardiology as a specialty, both in the regional tertiary centre and the district general hospital, should have its services defined in a way that will allow satisfactory contracting arrangements for purchasing and monitoring of performance. It is appropriate that the British Cardiac Society should make recommendations to purchasing authorities as to how specifications should be written as well as the volume of care appropriate for a given population.

The advent of the internal market has led to changes in responsibility for waiting lists. It is now clear that purchasers are responsible for waiting times and though providers have a responsibility to provide treatment for as many patients as possible within their available resource, it is essential that the profession defines guidelines so that purchasers understand the implications of their actions. In particular, it is important to define the terms "emergency", "urgent", and "elective".

The relationship between tertiary centres and district hospitals requires further development so that the best possible service in cardiology and cardiac surgery is made available to as many patients as possible at the lowest possible cost.

NOTICE

The 1994 Annual Meeting of the **British Cardiac Society** will take place at the Riviera Centre, Torquay from 17 to 20 May.